

REMARKS

The present application was filed on November 21, 2000 with claims 1-41. Claims 1-41 are currently pending in the application. Claims 1, 13, 28 and 37 are the independent claims.

In the Office Action, claims 13-15, 17, 28, 32, 37 and 38 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,774,660 to Brendel et al. (hereinafter "Brendel"). In addition, claims 1, 2 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Cisco Systems, *Catalyst 6000 Family Accelerated Server Load Balancing*, http://www.cisco.com/warp/public/cc/pd/si/casi/ca6000/tech/aslb_wp.htm (hereinafter "Cisco") in view of U.S. Patent No. 6,098,093 to Bayeh et al. (hereinafter "Bayeh"). Claims 1-3 and 5-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Cisco in view of P. Srisuresh et al., *RFC2391: Load Sharing using IP Network Address Translation (LSNAT)*, August 1998 (hereinafter "RFC 2391"). Claims 1, 12 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,774,660 to Brendel et al. (hereinafter "Brendel") in view of Bayeh. Claims 18, 20-22 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Brendel in view of Cisco. Claim 19 is rejected under 35 U.S.C. §103(a) as being unpatentable over Brendel in view of U.S. Patent No. 6,473,802 to Masters. Claims 23, 29-31 and 39-41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Brendel. Finally, claim 25-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over Brendel in view of Cisco in further view of Bayeh.

The Examiner has also rejected claims 19, 23 and 24 under 35 U.S.C. §112, 2nd Paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. Applicant believes that the claims as filed were compliant with §112, 2nd Paragraph. Nonetheless, solely in order to expedite prosecution, Applicant has amended these claims as suggested by the Examiner.

In this response, Applicant traverses the §102(b) rejections. Notwithstanding this traversal, Applicant chooses to amend claim 13 without prejudice (see below). Applicant further traverses the §103(a) rejections where Brendel is the primary reference. With respect to the §103(a) rejections where Cisco is the primary reference, Applicant chooses to amend claim 1, without prejudice (see below). Applicant respectfully requests reconsideration of the present application in view of these amendments and the following remarks.

With respect to the §102(b) rejections, Applicant initially notes that the Manual of Patent Examining Procedure (MPEP), Eighth Edition, August 2001, §2131, specifies that a given claim is anticipated “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, MPEP §2131 indicates that the cited reference must show the “identical invention . . . in as complete detail as is contained in the . . . claim,” citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Each of the independent claims 13, 28 and 37 describes a combination which comprises both a load balancer and a discrete load balancing accelerator (or “accelerator”). The separation of the accelerator element from the load balancer element is clear from the construction of the claims. For example, claim 13 describes “[a] method . . . comprising: receiving, by an accelerator, a packet directed from or to a load balancer.” Claims 28 and 37 both identically describe “[a] load balancing accelerator, comprising: an input interface which receives packets directed to a load balancer.” Similarly, the specification also defines an accelerator as a separate element from a load balancer. According to the specification, a load balancer may receive packets directed to a Web site and distributes the packets between the plurality of servers. See the specification, p. 1, lines 5-10. An accelerator, on the other hand, learns how to distribute packets based on the behavior of the load balancer and forwards subsequent packets from a client to the load balancer directly to the servers. See the specification, p. 1, line 16 to p. 2, line 3. An accelerator may function in part, thereby, to advantageously reduce the load on the associated load balancer.

In formulating the §102(b) rejection of claims 13, 28 and 37, the Examiner argues that each and every element of the claims is anticipated by Brendel. However, while Brendel describes a form of load balancer, it fails to describe a discrete element corresponding to an accelerator. Because of this omission, the Examiner argues that the load balancer in Brendel functions as both a load balancer and a corresponding accelerator. More specifically, the Examiner states in the Office Action on p. 4 that:

The load balancer disclosed by Brendel et al. performs the functions of an accelerator as disclosed by the Applicant, since it enters a “pass through” state which forwards successive

packets from the client directly to the assigned server, without load balancing them ([Brendel,] Col 12, Lines 59-63).

Moreover, on p. 17 of the Office Action, the Examiner states that, in Brendel, “the accelerator functions are integral to the load balancer.” With these explanations, the Examiner substitutes Brendel’s load balancer for the discrete accelerator element when arguing that Brendel anticipates the claims in the present invention.

Applicant respectfully disagrees that Brendel’s load balancer describes the discrete accelerator described in claims 13, 28 and 37. Because Brendel only describes a load balancer, it, by logical inference, fails to describe an element that is capable of receiving “a packet directed from . . . a load balancer,” like the accelerator in claim 13 and in many of the dependent claims, e.g., claims 15 and 16. Moreover, a load balancer, even one with more than one state of operation, does not function like a discrete accelerator acting in combination with a load balancer. One skilled in the art will recognize that the load balancer of Brendel, for instance, is not capable of doing load balancing operations and acceleration operations simultaneously. Brendel’s load balancer must enter a “pass through” state in order to send subsequent packets from the browser to the assigned server. See Brendel, col. 12, lines 59-63. A discrete accelerator, on the other hand, is capable of sending packets directly to a server while the load balancer continues to load balance. See the Specification, p. 1, line 16 to p. 2, line 3. Consequently, a discrete accelerator, as described in claim 13, 28 and 37, may advantageously reduce the load on the load balancer and, thereby, decrease the need to replace or add load balancers. See the specification, p. 1, lines 11-15. Brendel’s invention is devoid of such an advantage.

For the foregoing reasons, Applicant respectfully submits that independent claim 13, 28 and 37 should be allowed as filed over the §102(b) rejections. Notwithstanding this traversal, Applicant chooses to amend claim 13 to better reflect the scope of the invention. Claim 13 is amended such that the load balancer is “configured to operate in a first mode and a second mode, wherein the load balancer operating in the first mode changes at least one of a destination IP address and a destination port of one or more packets it forwards and the load balancer operating in the second mode changes at least a source IP address and a destination IP address of one or more packets it forwards.” Such a limitation is found in the application as originally filed, for example, in the specification, p. 2, lines 4-13. The amendment further limits the entry created by the accelerator in the list of destination

servers such that the entry comprises packet parameters that are “not changed by the load balancer.” This limitation is also found in the application as originally filed, for example, in the specification, p. 3, lines 8-15 and lines 20-25.

Dependent claims 14, 15, 17, 32 and 38 are believed allowable for at least the reasons identified above with regard to their respective independent claims, and these claims are also believed to specify additional separately-patentable subject matter relative to Brendel and other prior art of record. For instance, dependent claim 14 describes “[a] method according to claim 13, wherein creating the entry comprises creating an entry which does not include a destination address of a Web site.” This dependent claim further limits creating “an entry in the list of destination servers” described in claim 13. In formulating the §102(b) rejection, the Examiner argues that claim 14 is anticipated by Brendel, col. 7, lines 14-29, where it states:

In further aspects the packets received from the client are TCP/IP packets having a destination IP address which is a virtual IP address of the load balancer. The virtual IP address of the load balancer is changed in the packets to a real IP address of the assigned node and the packets are passed to a modified IP layer. The real IP address determines a physical route from the load balancer to the assigned node over a network and a physical network address is generated for the assigned node and the physical network address is attached to the packets. The real IP address in the packets is changed back to the virtual IP address of the load balancer before transmission of the packets with the physical network address. Thus the physical network address is generated from the real IP address of the assigned node, but the packets are transmitted to the assigned node containing the virtual IP address of the load balancer.

Applicant respectfully submits that Brendel does not describe creating “an entry in a list of destination servers” in the above cited-paragraph. Instead, Brendel merely describes changing the IP address in the packets.

With respect to the §103(a) rejections, Applicant initially notes that MPEP §2143.03 states that in order “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art,” citing In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant also notes that MPEP §2143.03 provides that “[i]f an independent claim

is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious,” citing In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The Examiner rejects claims 1, 2 and 4 as being unpatentable over Cisco in view of Bayeh, and rejects claims 1-3 and 5-11 as being unpatentable over Cisco in view of RFC 2391. As stated above, Applicant chooses to amend claim 1, without prejudice, in order to better reflect what the Applicant believes the scope of the invention to be. Like claim 13, claim 1 has been amended so that the load balancer is “configured to operate in a first mode and a second mode, wherein the load balancer operating in the first mode changes at least one of a destination IP address and a destination port of one or more packets it forwards and the load balancer operating in the second mode changes at least a source IP address and a destination IP address of one or more packets it forwards.” Such a limitation is found in the application as originally filed, for example, in the specification, p. 2, lines 4-13. Claim 1 is further amended such that the fewer than five packet parameters that are compared in order to determine an entry on the list are “packet parameters that are not changed by the load balancer.” This limitation also has support in the application as originally filed. See, for instance, the specification, p. 3, lines 8-15 and 20-25. Finally, dependent claim 9 is broadened to be in accordance with the amended limitations in claim 1.

Applicant respectfully submits that Cisco, as the primary reference in the §103(a) rejections, does not teach or suggest a load balancer “configured to operate in a first mode and a second mode, wherein the load balancer operating in the first mode changes at least one of a destination IP address and a destination port of one or more packets it forwards and the load balancer operating in the second mode changes at least a source IP address and a destination IP address of one or more packets it forwards.” Instead, Cisco states that its load balancer (LocalDirector) “forwards the packets to the appropriate server by changing the destination MAC address to that of the real server” (Cisco, p. 9, lines 23-26). Cisco therefore does not teach or suggest all the claim limitations of amended claim 1. The Bayeh and RFC 2391 reference, moreover, do not correct this deficiency.

For the foregoing reasons, Applicant believes that independent claim 1, as amended, is allowable over the §103(a) rejections in which Cisco is the primary reference. Dependent claims 2-11 are believed allowable for the same reasons and are also believed to specify additional separately-patentable subject matter.

With regard to the remaining §103(a) rejections of claims 1, 12, 16, 18-26, 29-31 and 39-41 as unpatentable over Brendel as a sole reference or in combination with other references, Applicant notes that the Examiner relies on Brendel to teach or suggest both the load balancer element and discrete accelerator element present in each of the rejected claims. Applicant again submits, as described above with respect to the §102(b) rejections, that Brendel fails to teach or suggest such a system or method, and that the added references fail to correct this fundamental deficiency. Applicant, therefore, respectfully submits that claims 1, 12, 16, 18-26, 29-31 and 29-41 would not have been obvious at the time the invention was made and that the claims should be allowed.

In view of the above, Applicant believes that claims 1-41, as amended, are in condition for allowance, and respectfully requests the withdrawal of the §102(b) and §103(a) rejections.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joseph B. Ryan", followed by a horizontal line.

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